CHAPTER 2

READINESS BASED LEVELING (RBL)

COMPUTATION OF LEVELS

2.1. Purpose and Scope.

2.1.1. This chapter describes the RBL computation of Peacetime Operating Spares (POS) levels to include RBL item criteria, computation input data, computation schedule and computation logic. This chapter provides the logic for RBL computation of Working Level data that is passed to EXPRESS. Details of RBL math formulas that are applied in RBL computation are contained in the attachment, RBL Production System Process Description.

2.2. Computation of RBL Levels – Purpose.

2.2.1. D035E computes levels to provide the optimum allocation of POS levels for reparable items for USAF bases and Air Logistics Centers (ALC). The optimum allocation is determined to be that which minimizes Expected Backorders (EBO) or in other terms, the allocation that results in the lowest expected time that base maintenance activities will have to wait for a requisitioned part.

2.3. RBL Computation Starts With the D200A Computed Requirement.

2.3.1. The RBL process starts with the D200A computation of the requirement. The maximum levels RBL can allocate is the D200A requirement, the sum of these; OIM Base Repair Cycle Requirement, OIM Base Order and Ship Time Requirement, Special Levels, Depot Safety Level, OIM Depot Reapir Cycle, Base Safety Level, D200A Non-Job Routed Depot Repair Cycle Requirement and Total Overhaul Stock Level.

2.3.1.1. When the demands reported by D035K to D200A are less than one hundred percent organic demands then RBL will adjust the D200A requirement that can be allocated. RBL will multiply the percent of D035K demands that are organic demands times the D200A Non-Job Routed Depot Repair Cycle Requirement and Total Overhaul Stock Level quantities. The recalculated quantities for these two fields are added to the other six D200A requirement quantities.

2.3.1.2. RBL will allocate more levels than the D200A computed requirement in order to support levels computed for AMC Forward Supply Locations and for levels computed to support DODAAC-items on AFCA's Communications-Electronics low density item-base list.

2.4. RBL Derives a Pipeline for Each Item – User Account.

2.4.1. SBSS and D035K accounts compete for RBL levels based upon the pipeline required to support each item-user account.

2.4.1.1. The RBL process for developing pipelines for each item-user account is selected based upon these considerations; the type of account, SBSS or D035K, the type of item, the Program Select Code and D035K organic use percent.

2.4.1.2. "Item – account" pipeline data is rolled-up to the family master NSN to compete for levels

2.4.2. For SBSS accounts, RBL derives the pipeline at the family master NSN. SBSS usage data reported on members of the I&S family is rolled-up and applied to derive the pipeline. This usage

data is applied; Daily Demand Rate (DDR), Percent Base Repair (PBR), Order and Ship Time (OST), condemnation percent and special levels.

2.4.3. For D035K accounts, for insurance and numerical stockage objective items, RBL derives the pipeline at the Sub Group Master (SGM) NSN by applying usage data reported on any item in the subgroup.

2.4.3.1. For D035K accounts, for computing items that the D200A Program Select Code (PSC) identifies as not being a Depot Level Maintenance (DLM) item, RBL derives the pipeline at the SGM NSN by applying usage data reported on any item in the sub group. RBL will then develop the pipeline at the family master NSN by adding the SGM NSN pipelines.

For D035K accounts, for computing items that the D200A Program Select Code (PSC) identifies as not being a Depot Level Maintenance (DLM) item, RBL derives the pipeline at the SGM NSN by applying usage data reported on any item in the sub group.

2.4.3.2. For D035K accounts, for computing items that the D200A PSC identifies as DLM items, RBL derives the pipeline at the SGM NSN, using the D200A SGM DLM requirement. RBL applies the D200A DLM requirement to derive the DDR used in the pipeline calculation. The DLM requirement of any items in the sub group are used to derive the DDR for the SGM NSN.

2.4.3.2.1. RBL will modify the DDR computed from the DLM requirement if the D035K reported organic usage is less than one hundred percent. This is accomplished by computing the DDR from the DLM requirement and then multiplying that DDR by the organic use percent. RBL will then compute the D035K pipeline, at the SGM NSN, by applying the resultant DDR.

Table 2.1. DDR Applied in the RBL Computation of Item-SRAN Pipeline.

System	Insurance And NSO Items	Computing Item – Non Depot Level Maintenance Item	Computing Item – Depot Level Maintenance Item- 100% Organic Repair	Computing Item – Depot Level Maintenance Item- Less than 100% Organic Repair
SBSS	SBSS Reported DDR	SBSS Reported DDR Rolled-up to the I&S Family Master	N/A	N/A
D035K Reported Usage	D035K Reported DDR	D035K Reported DDR Rolled-up to SGM NSN	RBL Computed DDR Derived by Appling the SGM DLM Requirement. Rolled-up to SGM NSN	RBL Computed DDR as modified by the organic use percent and then Rolled-up to SGM NSN

2.5. Levels Are Computed at the Family Master NSN.

2.5.1. RBL computes levels at the family master NSN.

2.5.1.1. Pipelines, when derived at the Sub-group Master (SGM) NSN, are rolled-up to the I&S family master NSN before levels are computed.

2.6. Allocation of Levels.

2.6.1. RBL allocates levels to SBSS as they were computed, at the family master NSN.

2.6.2. RBL allocates levels to D035K accounts at the SGM NSN.

2.6.2.1. D035K levels computed at the family master NSNs are split among the SGM NSNs in proportion to the pipeline that each SGM NSN contributed to the family master pipeline.

2.7. Push of Levels.

2.7.1. Levels are pushed to SBSS accounts at the Family Master NSN.

2.7.2. Levels are pushed to D035K accounts at the SGM NSN.

2.7.3. RBL levels pushed to SBSS and D035K accounts overlay the repair cycle demand level that was computed by these accounts.

2.7.3.1. SBSS and D035K derive the Requisition Objective (RO) by adding the RBL level plus other allowed levels. SBSS and D035K report the RO to the Recoverable Asset Management System, D035C.

2.8. Schedule of RBL Computations.

2.8.1. Quarterly, D035E computes all item-user account levels.

Table 2.2. RBL Quarterly Computation Schedule.

COMPUTATION OF LEVELS	PUSH OF LEVELS
20 Jan	8 Feb
20 Apr	8 May*
5 Aug	23 Aug
20 Oct	8 Nov*

2.8.2. In the January and August quarterly cycles, RBL pushes all the levels computed except those items that RBL flags as "N" or "Z" type problem items.

2.8.3. * May and November are "off-cycle" pushes. The "off-cycle" push was established to reduce the impact of the volatility of RBL levels at the base. RBL compares the levels, at the I&S family master, computed in the off-cycle with the level computed in the previous quarterly computation and then selects the levels to be pushed.

2.8.3.1. In the off-cycle push, RBL selects these SBSS levels to be pushed; (a) levels that changed and resulted in a reduction of the worldwide expected backorders by more than 0.08 and (b) all levels that reflect an ASL change.

2.8.3.2. In the off-cycle push, RBL pushes only those D035K levels that changed.

2.8.4. "As Needed" Computations.

2.8.4.1. The "as needed" RBL computation capability is available except during the time period that quarterly levels are being computed, reviewed and pushed.

2.8.4.2. "As needed" RBL computations can be initiated for individual NSNs.

2.8.4.3. "As needed" computations apply the D200A requirement that was applied in the most recent RBL computation.

2.8.4.4. "As needed" computations apply current or updated SBSS and D035K usage data as identified in paragraph 2.8.3.7., 2.8.3.8. and 2.8.3.9.

2.8.4.5. "As needed" computations apply off-cycle logic when pushing levels. Levels are selected to be pushed in accordance with paragraphs 2.5.1.2.1 and 2.5.1.2.2.

2.8.4.6. "As needed" computation levels are pushed the evening of the day that the computation was initiated.

2.8.4.7. Inventory Management Specialists (IMS) can initiate an "as needed" computation through the Stock Control System "RBL File Maintenance Input" screen. The IMS can choose to apply usage data that was applied in the most recent RBL computation (current SBSS and D035K usage data), or the IMS can choose to apply the most recent reported usage data.

2.8.4.8. Air Mobility Command (AMC) Forward Supply Locations (FSL) can initiate an "as needed" computation by sending a 'XE4' transaction from SBSS to RBL. RBL will apply the most recent reported usage data.

2.8.4.9. Bases identified on AFCA Communications Electronics list as users of low density items, can initiate an "as needed" computation for those NSNs by sending an 'XE4' transactions from SBSS to RBL. RBL will apply the most recent reported usage data.

2.9. Criteria for Inclusion of NSNs in the RBL Computation.

2.9.1. All three of the following criteria must be satisfied for an item to be included in the RBL computation.

2.9.1.1. Criteria one - the item must be a recoverable item with an ERRC of 'C' or 'T'.

2.9.1.2. Criteria two - the item must be in the D200A computed requirement. A computed requirement of zero or greater fulfills this condition.

2.9.1.3. Criteria three - At least one of these three is required: (1) Demand data for the item was received by D035E from SBSS or D035K or (2) An adjusted stock level for the item is established in D035E or (3) A base or depot reported possession of item assets to the Recoverable Asset Management Program (RAMP).

2.10. Criteria For Computing a Level For A DODAAC.

2.10.1. An item – DODAAC will be included in the RBL computation if: (a) the DODAAC reported item usage, to include adjusted stock level data and initial spares support list data, to RBL or (b) the DODAAC reported possession of an asset to RAMP. In the case of D035K accounts the report must be for an asset with ownership/purpose code 'OA'.

2.10.2. RBL will compute a level for a NSN for AMC FSL accounts when the AMC quarterly input file to RBL identifies the NSN and FSL account. RBL will also compute levels for a NSN for a FSL accounts if the account submits an XE4 transaction.

2.11. Computation Data; Source of Data, Input Mechanism.

Table 2.3. Computation Data.

DATA	SOURCE OF DATA	DATA INPUT TYPE
Demand Data	SBSS and D035K	'XCB' Transaction

Special Levels Data	SBSS and D035K	'XE4' Transaction
Special Levels Data (Base Directed)	SBSS, D035K and IMS	IMS File Maintenance and SBSS and D035K 'XE4' Transaction
Special Levels – AMC (FSL)	AMC	AMC Quarterly Input File
Special Levels – AMC (FSL)	AMC FSL	'XE4' Transaction
Special Levels – C-E Low Density Items	AFCA	AFCA Quarterly Input File
CHPMSK Data	SBSS	'XE4' Transaction
FMS Projected Repair Data	AFSAC	AFSAC Quarterly Input File
Pipeline and Requirements Data	D200A	D200A Input File
PDM/EOH/NHA Requirement	D200A	D200A Input File
I&S Data	D035A	Transaction with D035A

2.11.1. Demand data is input to D035E by Document Identifier Code (DIC) 'XCB' transactions from SBSS and D035K. Chapter 3, identifies 'XCB' data elements.

2.11.2. ASL data is input by a variety of means depending upon the type of ASL and source of the ASL. Details on the ASL types and sources are described in D035E policy chapter 5.

2.11.2.1. In general, ASL are loaded, changed and deleted in D035E by DIC 'XE4' transactions from SBSS and D035K. RBL policy, chapter 3, describes 'XE4' transactions.

2.11.2.2. ASLs for AMC Forward Supply Locations (FSL) are established and deleted by two methods. In the quarterly RBL computation, FSL ASL are established by RBL computation that applies AMC input file data. Throughout the quarter, FSLs can load, change and delete ASL by 'XE4' transaction.

2.11.2.3. Communications-Electronics Low Density Item ASL are established in D035E at the time of the quarterly RBL computation by input file Air Force Communications Agency.

2.11.3. Contingency High Priority Mission Support Kits (CHPMSK) are established in D035E by 'XE4' transaction from SBSS. CHPMSK are described in Chapter 6.

2.11.4. Air Force Security Assistance Center (AFSAC) provides an input file of the projected quarterly repair requirements for Foreign Military Sales (FMS) customers. The input file from AFSAC is developed just prior to the D035E quarterly computation. This data is applied by RBL to develop the Working Level file data that is passed to Execution and Prioritization of Repair Support System (EXPRESS).

2.11.5. D200A provides an input file of the 'summary computation" data to D035E. This file includes pipeline data and requirement quantity and a projection of the quarterly repair requirements for other services.

2.11.5.1. D200A pipeline data is the total depot repair cycle time (DRCT). The DRCT includes the retrograde and the depot repair segments. The retrograde segment consists of the base processing time and reparable in-transit time. This portion of the DRCT moves the unserviceable asset from the base to the depot. The depot repair segment consists of the supply to maintenance time, shop flow time and serviceable turn-in time. This portion of the DRCT moves an unserviceable asset through the repair process at the depot. D035E uses this data in calculating the depot pipeline that is used in the levels allocation process and in calculating the Working Level.

2.11.5.2. The D200A requirement is the maximum quantity of levels that RBL allocates to the depot and base accounts. There are two exceptions to this rule. RBL will allocate levels for Forward Supply Location ASL and C-E low density item ASL even if the requirement is less than the ASL quantity.

2.11.5.2.1. Computing item requirement: TheD200A data elements used by RBL are: the OIM base repair cycle requirement, OIM base order and ship time requirement, special levels, depot safety level, OIM depot repair cycle, base safety level, non-job routed depot repair cycle requirement and total overhaul stock level. The sum of the quantities of these elements is used by RBL as the maximum allocation quantity.

2.11.5.2.2. Non-Computing (Insurance and NSO) items: The D200A data elements used by RBL for computing items are not available for the non-computing items. Therefore, RBL uses the repair level quantity as the maximum allocation quantity.

2.11.5.2.2.1. NIMSC 5 'NSO and insurance items' - items for which the AF is the Secondary Item Control Activity (SICA). For these items, RBL uses the D200A buy level quantity as the maximum allocation quantity.

2.11.5.3. D200A provides the depot level maintenance requirement (PDM/EOH/NHA) that is allocated as levels to D035K accounts when the program select code for the item is other than zero in the last three positions.

2.11.5.4. Schedule for Application of D200A Data in Quarterly RBL Computations

Table 2.4. Schedule for Application.

D200A REQUIREMENTS DATA	D035E COMPUTATION OF LEVELS
D200A Sep comp, Summary data, 2nd quarter data after asset cut-off date, March	20 January
D200A Sep comp, Summary data, 3rd quarter data after asset cut-off date, June	20 April
D200A Mar comp, Summary data, 2nd quarter data after asset cut-off date, September	5 August
D200A Mar comp, Summary data, 3rd quarter data after asset cut-off date, December	20 October

2.11.6. Interchangeability and Substitution (I&S) Data.

2.11.6.1. D035E applies I & S data that is resident in D035A. D035A is updated with I&S data via D043B.

2.12. Working Level Computation.

2.12.1. The Working Level is the RBL computed expected depot-level repair pipeline and buffer (safety level) for the items that EXPRESS will attempt to satisfy. This data is used by EXPRESS in the daily repair list determination decision. D035E computes the Working Level data and creates a file for EXPRESS when the quarterly RBL computation is run. A daily Working Level file is also output for pick up by EXPRESS.

2.12.2. The Working Level reflects demands on depot level repair from Air Force, FMS and other services.

2.12.2.1. D035E computes an Air Force WIP, CRI and CSI as part of the Working Level computation process. Both the Working Level and CRI values are passed to EXPRESS via the ZEDE-POT file. EXPRESS only loads the Working Level value.

2.12.2.1.1. AF Depot Daily Demand Rate (DDR) = Sum of all base daily NRTS

2.12.2.1.2. AF CRI = AF Depot DDR * Retrograde Process Days

2.12.2.1.2.1. AF WIP = AF Depot DDR * Repair Process Days

2.12.2.1.2.2. AF CSI = AF Depot Level - AF CRI - AF WIP

2.12.2.2. D035E computes the Total Working Level and Total CRI.

2.12.2.2.1. The Air Force Working Level = AF WIP + AF CRI.

2.12.2.2.2. Demands on the depot from FMS and other services are added to the AF

2.12.2.2.2.1. Working Level to compute the Total Working Level.

2.12.2.2.2.1.1. Total Working Level = AF Working Level + Repair Process Days * (FMS DDR + Other Service DDR)

2.12.2.3. A Total CRI value is also computed.

2.12.2.3.1. CRI = AF CRI + Retrograde Process Days * (FMS DDR + Other Service DDR)

2.12.3. Definitions applicable to the above acronyms/terms.

Table 2.5. Definitions.

ACRONYM/TERM	DEFINITION
WIP	Work In Process (WIP): Part of the depot pipeline, it's the expected number of assets being repaired at the depot.
CRI	Consolidated Reparable Inventory (CRI): Part of the depot pipeline, it's the stream of unserviceable assets returning to the depot (a.k.a. retrograde).
CSI	Consolidated Serviceable Inventory (CSI): The depot's serviceable assets.
Working Level	Sum of WIP and CSI
Air Force (AF) Depot Level	The stock level resulting from RBL's allocation of the Air Force worldwide requirement

2.12.4. Computation of Working Level data for Support Center Pacific (SCP).

2.12.4.1. Some items are repaired at the following two locations: Support Center Pacific (SCP) at Kadena AB, CONUS ALC. Computations for these items are handled in the following manner.

2.12.4.2. Prorate the AF Depot DDR between the CONUS ALC and the SCP based on the DDR of the using bases. The SCP's using SRANs are FB5200 through 5300 while the SRANs send their reparable assets to the ALCs.

2.12.4.3. Using the SCP and ALC's DDRs from the supported bases, prorate the AF WIP, CSI and CRI values between the SCP and ALC. This pro-ration results in SCP, WIP, and CRI values.

2.12.5. Working level report data can be viewed via the SCS – Levels – Interrogation - Working Level Inquiry screen.